Atty. Docket No.: **77297.004003C** PATENT

ENHANCED BINGO GAME METHOD, APPARATUS, AND COMPUTER PROGRAM PRODUCT

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RELATED APPLICATIONS

[0001] This application claims priority from U.S. Patent Application Serial Number 10/060,871, entitled "Enhanced Bingo Game Method, Apparatus, and Computer Program Product", filed January 29, 2002, which is incorporated herein by reference in its entirety. This application is also related to U.S. Patent Application Serial Number 10/244,039, entitled "Method and Apparatus for Remote Game Device with Failure Fallback and Restoration", filed September 13, 2002, and to U.S. Patent Application Serial Number 10/244,098, entitled "Method and Apparatus for RF Transmitter Layout in a Gaming Hall", filed September 13, 2002, which are incorporated herein by reference in their entirety.

FIELD OF THE INVENTION

[0002] The present invention relates to the field of gaming, and more specifically provides an enhancement to the game of bingo by including an additional level of entertainment and complexity to the existing game.

BACKGROUND OF THE INVENTION

[0003] States face ever-increasing costs just to maintain essential services, but residents are typically unwilling to pay higher taxes to fund these services. Some states have begun to recognize gaming as a potential revenue source which can help generate funds for the state, thereby offsetting the need for increased taxes. For example, most states now sponsor lotteries or the like, the proceeds of which typically go toward educational or other programs. In addition, more and more states are legalizing, albeit under heavy regulation, certain other types of gaming, such as slot machines.

[0004] One of the first games which is typically legalized by states, especially for non-profit fundraising activities, is bingo. Bingo is a game that has been widely played for generations. As described in U.S. Patent No. 5,857,911 to Fioretti ("Fioretti"), the teachings of which are incorporated herein by reference in their entirety, a traditional bingo game is played by a game operator, or "ball caller", selecting at random from a set

of seventy-five numbered balls stored in a hopper. In a traditional game, the numbers are divided into five subsets, with the numbers 1 through 15 associated with the letter "B", the numbers 16 through 30 associated with the letter "I", the numbers 31 through 45 associated with the letter "N", the numbers 46 through 60 associated with the letter "G", and the numbers 61 through 75 associated with the letter "O". As the ball caller selects a ball, he or she typically calls out the number on the ball and the letter associated with the numbers. Each player then reviews his or her bingo card or cards to determine whether his or her bingo card has a corresponding entry.

[0005] Bingo cards typically consist of a matrix of six rows and five columns of spaces, with the top row of spaces filled with the letters "B", "I", "N", "G", and "O", respectively, as illustrated in Figure 1. The remaining five-by-five matrix of spaces on the bingo card is filled with numbers chosen at random from the subset of numbers associated with the letter appearing at the top of the column in which a space appears. Thus, for example, all spaces in the "B" column are filled with numbers chosen randomly from the subset of numbers between 1 and 15, and the spaces in the "G" column are filled with numbers chosen randomly from the subset of numbers between 46 and 60.

[0006] As the ball caller calls out the number on a selected ball, players mark the called number with a dauber, marker, or other indicator if the number appears on the bingo cards being played that game. If the indicators on a bingo card form one or more pre-specified pattern, the player to whom the card belongs, or to whom the card has been assigned, wins a prize. For example, in U.S. Patent No. 6,398,645 to Yoseloff ("Yoseloff"), the teachings of which are incorporated herein by reference in their entirety, the shapes may include an "X", a plus, a "T", a horizontal line, a vertical line, or other alternative shapes. When the marks on a player's scorecard match a pre-specified pattern, the player has a "bingo" and can win the pot for that game, a prize associated with a specific shape, or the like.

[0007] Although typically associated with fundraisers for churches and other non-profit groups, bingo has become so popular that casinos have begun to offer bingo to their patrons. This has spurred the development of a variety of technological advancements and alternative bingo games, from the bingo-like slot machines taught by Yoseloff,

above, and by U.S. Patent No. 5,935,002 to Falciglia, the teachings of which are incorporated herein by reference in their entirety, to televised and Internet-based bingo games, such as those taught by U.S. Patent No. 5,951,396 to Tawil, U.S. Patent No. 6,012,984 to Roseman, U.S. Patent No. 6,186,892 to Frank et al., U.S. Patent No. 6,280,325 to Fisk, U.S. Patent No. 6,306,038 to Graves et al., and U.S. Patent No. 6,354,941 to Miller et al., the teachings of each of which are incorporated by reference herein in their entirety.

[0008] As bingo becomes more popular, casinos and others offering the game are searching for new variations on the game in an attempt to attract and maintain more customers. For example, U.S. Patent No. 5,482,289 to Weingardt (referred to herein as the Weingardt '289 reference), the teachings of which are incorporated herein by reference in their entirety, teaches expanding a bingo card from a traditional five-by-five matrix to a seven-by-seven matrix, with the added columns and rows shaded in an alternate color. The Weingardt '289 reference teaches that players can win a base prize by obtaining a five number bingo within the traditional five-by-five region, and that players can also win a larger prize by obtaining a seven number bingo. A seven number bingo falling completely within the added columns or rows is eligible for an even larger prize. The Weingardt '289 reference also teaches separately and distinctly marking some of the bingo balls to differentiate those bingo balls from other bingo balls. The Weingardt '289 reference discloses that such designations must be made prior to initiating the game. The Weingardt '289 reference further discloses varying the payouts made to a player depending on whether the player achieves a bingo made from randomly marked balls, or if the bingo is made from balls with a specific marking. The Weingardt '289 reference also discloses a bingo game with a progressive jackpot. In this aspect of the reference, a separate wager is made for the player to become eligible to win the progressive jackpot prize, which is awarded to the player who achieves the winning combination for the progressive jackpot.

[0009] U.S. Patent No. 5,727,786 to Weingardt (referred to herein as the Weingardt '786 reference), the teachings of which are incorporated herein by reference in their entirety, teaches randomly selecting a predetermined group of bingo numbers, located on a conventional bingo flash board, to be "blue" numbers, "green" numbers, and "red"

numbers, with the remaining numbers being "yellow" numbers. When a player achieves a bingo, the player wins certain preestablished payouts depending upon whether the player has a bingo consisting of numbers that are all the same color, or if the player's bingo consists of all but one number of the same color.

[0010] U.S. Patent No. 6,565,091 to Weingardt (referred to herein as the Weingardt '091 reference), the teachings of which are incorporated herein by reference in their entirety, teaches assigning the bingo numbers located on a conventional bingo flash board to at least five groups, with the groups identified by color. The size of each of the groups varies, with the result that a bingo consisting of a combination of numbers from the smallest group will be harder to achieve than a bingo consisting of a combination of numbers from a larger group. A player achieving a bingo of a single color group is paid a jackpot, wherein the jackpot sizes vary in relation to the difficulty of achieving a particular bingo. Players are awarded varying amounts depending on whether the bingo occurs with numbers assigned to a single color or multiple colors and, if a single color, the color of the bingo.

[0011] U.S. Patent No. 5,624,119 to Leake (referred to herein as the Leake '119 reference), the teachings of which are incorporated herein by reference in their entirety, teaches a bingo-like game in which colors or other elements are randomly assigned to each space on a card, although the Leake '119 reference teaches that colors should not repeat within a given column. Unlike traditional bingo, the set of numbers assignable to a given column is not limited, and numbers can be repeated across columns (although the Leake '119 reference teaches that numbers should be unique within a column). Thus, the letter designation at the top of a column becomes significant in the game taught in the Leake '119 game, as the column would be otherwise indistinguishable. According to the Leake '119 reference, a caller uses a random selection apparatus to randomly select and call a column, a color, and a number to be marked or covered within the spaces on a player's card face.

[0012] Although the references discussed above offer variants on traditional bingo games, none offer the unique, easily understood, and exciting playing characteristics of the present invention.

SUMMARY OF THE INVENTION

[0013] Accordingly, the present invention is directed to an apparatus, method, and computer program process for playing an enhanced bingo game that substantially obviates one or more of the limitations or disadvantages of the related art.

[0014] It is an object of an embodiment of the present invention to provide a novel bingo game having an improved level of excitement and attraction such that the game is more appealing and can better attract players.

[0015] It is a further object of an embodiment of the present invention to provide a bingo game which functions to present improved visual appeal.

[0016] It is still a further object of an embodiment of the present invention to add an overlay, or secondary game, to a traditional bingo game.

[0017] Another object of an embodiment of the present invention is to provide an overlay game that can be played independent of traditional bingo, without requiring changes to the traditional bingo rules, such that bingo players who are comfortable with, or have no desire to play anything but, traditional bingo can still participate in a game.

[0018] Additional features and advantages of the invention will be set forth in the description which follows, and in part will be apparent from the description, or may be learned by practice of the invention. The objectives and other advantages of the invention will be realized and attained by the structure particularly pointed out in the written description and claims hereof as well as the appended drawings.

[0019] A preferred embodiment of the present invention provides an overlay game, or secondary game, which can be played along with or in addition to traditional bingo. In one embodiment, a player must concurrently win both a traditional bingo game and the overlay game to collect winnings. In an alternative embodiment, the games may be played separately, such that a player may win the overlay game without causing the underlying bingo game to halt.

[0020] The overlay game of the present invention includes the definition of a set of colors, and the association of a win-enhancement value, or bonus, with each color. The win enhancement values are preferably fixed or progressive prize values, although it

should be apparent to one skilled in the art that alternative prizes, including automobiles, vacations, jackpot multipliers, or the like, can be substituted therefor without departing from the spirit or the scope of the invention. The set of colors preferably includes at least four colors, although it should be apparent to one skilled in the art that an alternative number of colors can be substituted therefor without departing from the spirit or the scope of the invention. The colors and associated win-enhancement values are preferably made known to players prior to initiation of an individual game, thereby increasing the sense of excitement associated with a game.

[0021] Game play preferably begins with the selection of a set of numbers to be included in the game (e.g. 1-75), and the division of this set into a plurality of subsets, as with traditional bingo. At least one number in each subset of numbers (e.g. 1-15, 16-30, 31-45, etc.) is then preferably randomly associated with a "diamond symbol" or other identifier. Although the term diamond symbol number is used herein to refer to the numbers within each subset which have been associated with a "diamond symbol", the term should not be construed as limiting the identifier associated with a number to a specific identifier type. Although diamond symbol numbers preferably vary from game to game, it should be apparent to one skilled in the art that diamond symbol numbers can remain the same through a plurality of games, an entire session, a plurality of sessions, or the like.

[0022] Bingo cards are preferably distributed to players as with traditional Bingo, and game play can begin. Although a preferred embodiment of the present invention is directed to use with electronic bingo cards, it should be apparent to one skilled in the art that traditional paper cards can be substituted therefor without departing from the spirit or the scope of the invention.

[0023] Game play traditionally begins with the drawing of a number from the set of numbers included in the game. Once a first number is drawn, each column of the bingo card is then preferably assigned a color from the set of colors. In a preferred embodiment, implemented using a five-by-five playing matrix bingo card, a player who wins a game by obtaining a bingo consisting of five matching numbers in a given column, wherein one of the numbers in the column is the "diamond symbol" number for

that subset of numbers, is awarded not only the prize associated with a traditional bingo, but also the prize associated with the color of the column and the corresponding win enhancement value.

[0024] Although a preferred embodiment of the present invention requires that the player have a column bingo with at least one diamond symbol number in the column for the player to be awarded the win enhancement value, it should be apparent to one skilled in the art that such a requirement is not necessary. By way of example, without intending to limit the present invention, in an alternative embodiment of the present invention, not all columns may be assigned a color, thereby altering the odds that a player will win the win enhancement value.

[0025] In addition to assigning win enhancement values to bingo card columns, and thus to bingos won within the columns, a preferred embodiment of the overlay game also assigns win enhancement values to bingo card rows. In such an embodiment, column colors are assigned as described above, and graphic symbols, such as, but not limited to, gem stones, sea shells, or the like, are preferably assigned to each row, wherein each row graphic preferably has an associated win enhancement value. As with column bingos, a player who wins a traditional bingo by matching all five numbers in a given bingo card row is also eligible for the win enhancement value associated with that row. In a preferred embodiment, to win the win enhancement value, the row must contain at least three "diamond symbol" numbers, although one skilled in the art will appreciate that the requisite number of "diamond symbol" numbers may be varied without departing from the spirit or the scope of the invention. Furthermore, in an alternative embodiment of the present invention, not all rows may be assigned a graphic symbol, thereby altering the odds that a player will win the win enhancement value.

[0026] Although the preferred embodiment of the present invention described herein associates specific indicators with specific aspects of the game, such as the colors associated with columns, graphics associated with rows, and diamond symbols associated with numbers within number subsets, it should be apparent to one skilled in the art that alternative indicators, including, but not limited to, graphics based on the time of year (e.g. Christmas trees, wreathes, snow men, hearts, bows and arrows, cherubs, or the like),

graphics based on the location (e.g. palm trees, sea shells, sun glasses, suntan lotion bottles, skis, ski boots, ski poles, or the like), graphics consistent with a given theme (e.g. gem stones, gold coins and treasure chests, Asian language characters, Greek language characters, player photographs, celebrity photographs, or the like), crosshatching or other shading, and audio or video clips, may be substituted therefor without departing from the spirit or the scope of the invention.

[0027] While the description above focuses primarily on column and row bingos, it should be apparent to one skilled in the art that the present invention is readily adaptable to any winning bingo pattern. By way of example, without limiting the present invention, a plurality of winning bingo patterns may be defined. An overlay can then be created by assigning a win enhancement value to each of the plurality of bingo patterns, preferably along with a minimum number of "diamond symbol" numbers necessary to activate payment of the win enhancement value. Still further, players may elect to participate in, and may win, the overlay game of the present invention separately from the underlying bingo game. By way of example, without intending to limit the present invention, a first set of patterns necessary to win the underlying bingo game may be defined, and a second set of patterns associated with the overlay game may be defined. The patterns in the pattern sets may be mutually exclusive, or there may be patterns in common within the pattern sets. In such an embodiment, players may win the overlay game without causing the underlying bingo game to be halted.

[0028] As described above, one object of the present invention is to enhance the suspense associated with playing bingo, and a preferred embodiment of the present invention achieves such heightened suspense by waiting until a game begins to determine and/or disclose to players the "diamond symbol" numbers and the indicators to rows, columns, and/or other winning patterns.

[0029] It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0030] The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and together with the description serve to explain the principles of the invention.

[0031] In the drawings:

[0032] Figure 1 is an illustration of a traditional bingo card as implemented in the prior art.

[0033] Figure 2 is a flow chart illustrating a preferred game play sequence.

[0034] Figure 3 illustrates a sample electronic bingo card which can be used in connection with a preferred embodiment of the present invention.

[0035] Figure 4 is a diagram of a hopper used to display numbers which have been randomly drawn in accordance with a preferred embodiment of the present invention.

[0036] Figure 5 is a block diagram of an apparatus used in a preferred embodiment of the present invention.

[0037] Figure 6 is a block diagram of components comprising a preferred apparatus according to the present invention.

[0038] Figure 7 is a sample game information screen, as implemented in a preferred embodiment of the present invention.

[0039] Figure 8 is a block diagram of an embodiment of the present invention utilizing a computer network.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0040] Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings. The present invention in its preferred embodiment is essentially an overlay, or secondary game that can be played in addition to, or as an enhancement to, a traditional bingo game.

[0041] Figure 2 is a flow chart illustrating a game play sequence according to a preferred embodiment of the present invention. The game play sequence is preferably

implemented using one or more electronic playing cards similar to that illustrated in Figure 3, although it should be apparent to one skilled in the art that traditional playing cards can be substituted therefor, or used in combination therewith, without departing from the spirit or the scope of the invention. Furthermore, although the electronic playing card of Figure 3 uses a traditional five-by-five matrix of numbered spaces, it will be apparent to one skilled in the art that the number of rows and/or columns implemented on a playing card can be varied without departing from the spirit or the scope of the invention. Still further, although a preferred embodiment of the present invention utilizes a standard seventy-five ball hopper, it will be apparent to one skilled in the art that the total number of balls, and the number of balls within each subset of numbers, can be varied without departing from the spirit or the scope of the invention. In such alternative embodiments, the payout associated with a win may be adjusted based on the corresponding changes in the odds of such a win.

[0042] As Figure 2 illustrates, game play preferably begins with the distribution of one or more bingo cards to persons interested in participating in the game (Block 205). Such bingo cards are preferably distributed in a secure manner or otherwise associated with a given bingo game or set of bingo games, such that the ball caller or other official is aware of those cards intended for use with a given bingo game. In a preferred embodiment of the present invention in which electronic bingo cards are implemented, a random number generator may be used to generate the numbers appearing on the electronic bingo cards as the cards are distributed, at the beginning of a game, or the like.

[0043] At a given time, the ball caller preferably allows a computer apparatus to draw the first ball (Block 210). Although the embodiment described herein utilizes a computerized ball drawing apparatus which preferably emulates a traditional bingo ball hopper, it should be apparent to one skilled in the art that alternative ball drawing means may be substituted therefor without departing from the spirit or the scope of the invention. In a preferred embodiment, the first ball is drawn, but the number appearing on the first ball is not called to the players until column, row, or any other indicators appropriate to the current game have been determined. In an alternative embodiment, players may be notified of the number on the ball prior to such determinations.

[0044] As illustrated by block 215 of Figure 2, game play preferably proceeds with the association of colors with bingo card columns. Column colors are preferably selected from a set of four colors, although it should be apparent to one skilled in the art that the number of colors in the set can be varied without departing from the spirit or the scope of the invention. Each color preferably has a pre-defined win enhancement value associated with it. Column color selection preferably begins by selecting a color for the "N", or middle, column. The "N" column is typically chosen first because, as illustrated in Figure 1, the "N" column typically contains a "free" space, which impacts the odds of winning in the "N" column. Thus, a preferred embodiment of the present invention avoids associating a high win enhancement value with the "N" column, and the set of colors from which the "N" column color is chosen is therefore limited compared to the total set of available colors.

[0045] According to a preferred embodiment of the invention, once the "N" column color has been assigned, other column colors may be assigned. In a preferred embodiment, the color associated with the "N" column is removed from the set of available column colors prior to assigning column colors to the other columns. A preferred embodiment of the present invention assures that three of the five columns are assigned the same column color, with that color preferably associated with a minimum win enhancement value. The remaining columns are then preferably assigned colors at random from the remaining set of colors. A preferred embodiment of the present invention only allows the color associated with the minimum win enhancement value to be assigned to multiple columns; the remaining colors are assigned to no more than one column. Although the column color selection method outlined above is presently preferred, it should be apparent to one skilled in the art that the number of columns to which colors are assigned, the number of colors, the number of win enhancement values, and other such parameters can be varied without departing from the spirit or the scope of the invention.

[0046] In an alternative embodiment, the set of colors and associated win enhancement values for the "N" column may be separate from the set of colors that can be associated with the other columns. In such an embodiment, it may be possible to assign a color to a column as the first ball corresponding to the column is called, thereby further enhancing the suspense created by the present invention.

[0047] As illustrated by Block 220 of Figure 2, game play preferably also includes assigning at least one graphic to at least one row. Row graphics are preferably selected from a set of four graphics, although it should be apparent to one skilled in the art that the number of graphics in the set can be varied without departing from the spirit or the scope of the invention. Each graphic preferably has a pre-defined win enhancement value associated with it. Row graphic selection preferably begins by selecting a graphic for middle row. The middle row is typically chosen first because, as illustrated in Figure 1, the middle row typically contains a "free" space, which impacts the odds of winning in the middle row. Thus, it may be advantageous to avoid associating a high win enhancement value with the middle row, and the set of graphics from which the middle row graphic is chosen is therefore preferably limited. Once the middle row graphic has been assigned, other row graphics may be assigned.

[0048] In a preferred embodiment, three of the remaining four rows are assigned a specific graphic, with which a minimum win enhancement value is associated. The remaining row is preferably assigned an alternative graphic. A preferred embodiment of the present invention only allows the graphic associated with the minimum win enhancement value to be assigned to multiple rows; the remaining graphics are assigned to no more than one row. Although the row graphic selection method outlined above is presently preferred, it should be apparent to one skilled in the art that the number of rows to which graphics are assigned, the number of graphics, the number of win enhancement values, and other such parameters can be varied without departing from the spirit or the scope of the invention. In an alternative embodiment, the set of graphics for the middle row may be separate from the set of graphics that can be associated with the other rows.

[0049] Although it is preferable to assign a color to the middle column before assigning other column colors, and to assign a graphic to the middle row before assigning other row colors, it should be apparent to one skilled in the art that the present invention can be implemented without such a restriction. By way of example, without intending to limit the present invention, the use of a bingo card without a free space may obviate the need for such special color assignment techniques without departing from the spirit or the scope of the invention.

[0050] As illustrated by block 225 of Figure 2, game play also preferably includes assigning a symbol, referred to herein as a "diamond symbol", to one number in each of the subsets of numbers. The term "diamond symbol" is used herein for clarity and should not be interpreted as limiting the present invention to gem-based graphics or specific indicator types; it should be apparent to one skilled in the art that any indicator can be used without departing from the spirit or the scope of the invention. In a preferred embodiment, a number from each subset of numbers (i.e. 1-15, 16-30, 31-45, 46-60, and 61-75) is selected at random, and a diamond symbol is associated with each number. As will be described below, diamond symbols are preferably used as win value enhancement activators. While a preferred embodiment of the present invention uses a single diamond symbol and assigns the symbol to a single number in each subset, an alternative embodiment utilizes multiple diamond symbols, with the different diamond symbols further augmenting the win enhancement value. In another alternative embodiment, multiple numbers within each number subset may be assigned diamond symbols.

[0051] Although Figure 2 illustrates blocks 215, 220, and 225 as occurring sequentially, it should be apparent to one skilled in the art that the order can be varied, and that the steps may occur effectively simultaneously, without departing from the spirit or the scope of the invention.

[0052] According to the embodiment illustrated in Figure 2, once column colors, row graphics, and diamond symbols are assigned and preferably overlaid on the player's bingo card, game play proceeds in a manner similar to that of traditional bingo (Block 230). As described above, column colors, row graphics, and diamond symbols are preferably used as win value enhancements. In such a preferred embodiment, if a player wins a bingo game by getting a column bingo (i.e. all of the numbers in a specific column of the player's bingo card have been called), and if the column bingo includes at least one number with which a diamond symbol has been associated, then the player's win is enhanced by the value associated with the color assigned to the column in which the bingo occurred (Block 235). If the winning column bingo does not include at least one diamond symbol, then the player may win the standard column bingo pot, if such a pot is available. In this way, the diamond symbols act as win enhancement activators.

[0053] Row bingos are preferably handled similar to column bingos. In a preferred embodiment, if a player wins a bingo game by getting a row bingo (i.e. all of the numbers in a specific row of the player's bingo card have been called), and if the row bingo includes at least three numbers with which a diamond symbol has been associated, then the player's win is enhanced by the value associated with the graphic assigned to the row in which the bingo occurred (Block 240). If the winning row bingo does not include at least three diamond symbols, then the player may win the standard row bingo pot, if such a pot is available.

[0054] In one embodiment of the present invention, a player's win may also be enhanced if the bingo contains one or more diamond symbol numbers,. Alternatively, the win enhancement value may be adjusted based on the number of diamond symbol numbers in the bingo (Block 245).

[0055] It is statistically possible for a player to win multiple bingos from the same set of ball calls. A preferred embodiment of the present invention pays the winner based only on the highest payout available.

[0056] Although the description provided above defines win enhancement values for only column and row bingos, it should be apparent to one skilled in the art that the present invention can be readily adapted to work with any pre-defined bingo patterns. By way of example, without limiting the present invention, a bingo made from what is commonly referred to as a "six pack" configuration, wherein the bingo contains at least three diamond symbols, may win the highest win enhancement value associated with the columns or rows in which the "six pack" occurs.

[0057] Still further, although it is presently preferred that there be a correlation between winning bingo patterns and patterns necessary to win the overlay game of the present invention, it should be apparent to one skilled in the art that the overlay game can be played separately from the underlying bingo game. By way of example, without intending to limit the present invention, players may pay an additional fee to participate in the overlay game, and the odds of winning the overlay game may be greater or less than the odds of winning the underlying bingo game, thereby increasing player interest in

both the bingo game and the overlay game and enhancing the excitement associated with both games.

[0058] Although diamond symbols are described above as activating a win enhancement value when a specific number of diamond symbols are included in a bingo, it will be apparent to one skilled in the art that the number of diamond symbols required to activate a win enhancement value may be varied without departing from the spirit or the scope of the invention. By way of example, without limiting the present invention, a minimum number of diamond symbols may be required to activate the win enhancement value, with additional diamond symbols further enhancing the win value.

[0059] A preferred embodiment of the present invention can utilize progressive values as a basis for the win enhancement value associated with row and column bingos, or other bingo configurations, that include a minimum number of diamond symbols. In a preferred embodiment, win enhancement values associated with column bingos containing at least one diamond symbol are progressive values which are hall-specific, and win enhancement values associated with row bingos containing at least three diamond symbols are progressive values which span a plurality of halls.

[0060] There are numerous ways for a player to win the enhanced game of bingo according to preferred embodiments of the present invention. By way of example, without limiting the present invention, a prize may be awarded for a bingo win in a single column, or there may be a larger prize for multiple column bingo wins.

[0061] In an alternative embodiment, colors, graphics, or other win value enhancement indicators may be associated with specific spaces on the bingo card, with any bingos containing such indicators being awarded the win value enhancement associated therewith.

[0062] Figure 4 illustrates a sample called-ball hopper 400 as used in an embodiment of the present invention. Called-ball hopper 400 can be a conventional bingo ball hopper, a virtual hopper that generates and displays called balls, or the like. Called-ball hopper 400 preferably displays the numbers with which diamond symbols have been associated, as indicated by numbers 410, to simplify player game play.

[0063] An alternative column color assignment method can be described using the ball hopper illustrated in Figure 4. If the first numbered ball drawn is the "1" ball, the ball is placed in the "B" column of the hopper, and a color is randomly selected for the "B" column. In the example illustrated in Figure 4, the color pink is randomly selected from a set of colors and associated with the subset of numbers associated with the letter "B," and thus with the entire "B" column. The background behind the "B" at the top of the hopper, as indicated by region 405, is preferably colored pink to indicate the column color. The background color behind the other letters is also preferably changed to reflect the column color as each color is assigned.

[0064] Continuing with the example illustrated in Figure 4, if the next ball drawn is 65, this number would fall into the "O" column. Since no color has yet been associated with the "O" column, the color green may be randomly selected from the remaining group of colors and assigned to the entire "O" column. The example illustrated in Figure 4 continues with the drawing of the 2 ball. Since the 2 ball is associated with the "B" column, and since the "B" column is already associated with the color pink, no additional color selection is necessary, and play continues. In the example illustrated in Figure 4, the 16 ball is the next ball drawn, which falls into the "I" column. The color blue may be randomly selected from the group of remaining colors and associated with the "I" column. If the 35 ball is the next ball drawn, this ball falls into the "N" column. Since no color has been associated with the "N" column, the color orange may be selected from the remaining colors and associated with the "N" column. The next ball drawn is 620, thus falling into the "G" column. Since no color has been associated with the "G" column in this game, the color red can be randomly selected from the remaining colors and associated with the "G" column. At this point in the game, all five columns have been associated with a color, and play can preferably continue as in a conventional bingo game, with no further color selection.

[0065] A basic form of the enhanced game of bingo according to an embodiment of the present invention can be played as a conventional, paper-based system, using physical indicators which are overlaid on a paper bingo card while a live caller draws numbered balls from a rotating cage. Column colors, row symbols, and diamond symbol numbers may also be displayed in one or more centralized displays, such as, but not limited to,

displays similar to traditional Bingo boards, and video monitors. In still another embodiment, column colors, row symbols, and/or diamond symbol numbers may be selected in advance of the initiation of a game, thereby permitting custom Bingo cards to be printed with the appropriate identifiers contained thereon.

[0066] As illustrated in Figure 5, bingo cards can also be displayed on a video monitor display, handheld electronic display device, or other suitable apparatus. Examples of suitable handheld display devices include, but are not limited to, the TED®, TED^{2}C™, Diamond Elite™, Diamond Pro™; and D. Handheld™ apparatuses manufactured by GameTech International, Inc. of Reno, NV; the apparatus described in U.S. Patent Application Serial Number 10/244,039 by Keeton et al.; the iPaq™ family of handheld computers manufactured by Hewlett Packard Company of Palo Alto, CA; the Palm family of handheld computers manufactured by Palm, Inc. of Milpitas, CA; and the like.

[0067] In the preferred embodiment illustrated in Figure 5, bingo cards are preferably implemented as part of an electronic system that allows players to play large numbers of cards simultaneously using an electronic card tending device, such as currently used in bingo parlors that have gaming licenses. In such a preferred electronic embodiment, players can use card tending devices 500-1 through 500-n, where n represents the number of card tending devices available to players. As row, column, diamond symbol, or other indicators are selected, card tending device 500 can display such indicators to players. In the preferred embodiment of Figure 5, row and column indicators are displayed as part of electronic bingo cards 300 of Figure 3. Each electronic bingo card also preferably has a unique identification number that allows a bingo win to be verified by caller 510. Card tending devices 500 are preferably in communication with caller 510 to facilitate such verification. By way of example, without intending to limit the present invention, card tending devices 500 may utilize the radio frequency (RF) transmitter layout described in U.S. Patent Application Serial Number 10/244,098, by Keeton et al., the teachings of which are incorporated herein in their entirety, to facilitate communication with caller 510.

[0068] In one embodiment, caller 510 may be an electronic system that generates random numbers that are used in place of the marked balls typically used in conventional bingo

games. Random number generation as used in this embodiment is generally known to those skilled in the art and refers to a computer generating a value from a seed in a manner that is preferably unpredictable either by a player or persons operating bingo hall 520. Caller 510 also randomly selects indicators from a finite set of indicators and selected indicators to card tending devices 500.

[0069] In an alternative embodiment, number generation can be handled differently, such as by using a ball blower and hopper configuration, as used in conventional bingo games, with a person drawing the numbered balls and entering the values into caller 510. Communication unit 530 can also be in communication with caller 510, and can be used to link bingo hall 520 with other bingo halls to share games and prize amounts with additional players. Communication unit 530 links bingo hall 520 with other bingo halls by connecting to remote communication units over a telephone line or other suitable communication medium.

[0070] Display 540 is also preferably in communication with caller 510, and can display various information to players on a large display screen such as a video monitor. In progressive games using the enhanced bingo game of the present invention, the prize amounts are updated based on win and payout data calculated by caller 510. Prize amounts can be calculated and displayed on display 540 either by using real time calculations based on current revenues for bingo hall 520 for the day or by using a special technique wherein revenues from a previous period, such as sales of bingo cards for the entire day prior to the current bingo session, are used as the basis for calculating the prize amount. Still further, the prize amount may be gradually incremented over a period of time less than that of the time period over which the revenues were collected, thereby adding a sense of excitement to the prize. By way of example, without intending to limit the present invention, if revenues for the day prior to the current two hour Bingo session totaled $100,000, the displayed prize may gradually increase to the $100,000 level over the course of the Bingo session, rather than over an entire day. The accelerated pace at which prize amounts increase in such an embodiment can introduce a heightened sense of excitement among players. In an alternative embodiment, the revenue figures from the corresponding Bingo session from the prior day may be used as the basis for the current day's prize, without any acceleration.

[0071] An example of a screen which may be displayed by display 540 are illustrated in Figure 7. The prizes shown in Figure 7 correspond to an enhanced bingo game being played using bingo cards such as those illustrated in Figure 3. Grand prize 700, having a larger jackpot amount, is typically the most difficult to win. Prizes 705 through 730 can have various amounts, although prizes 705 through 715 are preferably higher because of the combination of indicators. By contrast, prize 730 is relatively low because of the color associated with the column.

[0072] Figure 6 illustrates various components included in a computer system 600 that may be used to implement caller 510 and communication unit 530. Computer system 600 preferably includes at least a processor 605 and memory 610. Processor 605 may contain one or more microprocessors or similar devices. Among its many functions, memory 610 can store instructions and data for execution by processor 605. If the embodiment of the present invention is wholly or partially implemented in software, including a computer program, memory 610 may also store executable code when in operation. Memory 610 may include banks of dynamic random access memory (DRAM), high speed cache memory, and read only memory (ROM). System 600 preferably also includes a mass storage device 615, peripheral device(s) 620, portable storage medium drive(s) 625, input device(s) 630, a graphics subsystem 635 and a display 640.

[0073] For simplicity, the components illustrated in Figure 6 are depicted as being connected via a single bus 655. However, as will be apparent to one skilled in the art, the components may be connected through one or more data transport means without departing from the spirit or the scope of the invention. By way of example, without intending to limit the present invention, processor 605 and memory 610 may be connected via a local microprocessor bus, while mass storage device 615, peripheral device(s) 620, portable storage medium drive(s) 625, and graphics subsystem 635 may be connected via one or more input/output (I/O) buses. Mass storage device 615, which is typically implemented with a magnetic disk drive or an optical disk drive, is preferably a non-volatile storage device for storing data and instructions for use by processor 605.

[0074] In another embodiment, mass storage device 615 can also store a computer program implementing a means for automating an enhanced bingo game such that the computer program can be readily loaded into memory 610. Portable storage medium drive 625 preferably operates in conjunction with a portable non-volatile storage medium, such as a floppy disk or other computer readable medium, to input and output data and code to and from computer system 600. In one embodiment, the present invention may be stored on such portable medium, and can be input to computer system 600 via portable storage medium drive 625. Peripheral device(s) 620 may include any type of computer support device, such as, but not limited to, an input/output (I/O) interface, to add additional functionality to the computer system 600. For example, peripheral device(s) 620 may include a network interface card for interfacing computer system 600 to a network, a modem, and the like. Input device(s) 630 provide a portion of a user interface. Input device(s) 630 may include an alphanumeric keypad for inputting alphanumeric and other key information, or a pointing device, such as a mouse, a trackball, stylus or cursor direction keys.

[0075] To display textual and graphical information, computer system 600 preferably includes graphics subsystem 635 and display 640. Display 640 may include a cathode ray tube (CRT) display, liquid crystal display (LCD), other suitable display devices. Graphics subsystem 635 can receive textual and graphical information and processes the information for output to display 640. Additionally, computer system 600 can include output devices 655. Examples of suitable output devices include, but are not limited to, speakers, printers, and the like. Communications device 650 may control the flow of data between computer system 600 and a communication network via communication line 660.

[0076] The components illustrated in computer system 600 are those typically found in general purpose computer systems, and are intended to represent a broad category of such computer components that are well known in the art. The computer system of Figure 7 illustrates an architecture that may be used as a practical basis for implementing embodiments of the present invention. As should be apparent to one skilled in the art, other architectures, such as, but not limited to, those using Macintosh-based computers available from Apple Computer, Inc.; architectures using different bus configurations,

networked platforms, multiprocessor platforms, other personal computers, workstations, mainframes, navigation systems, and the like; and computer systems utilizing any of a variety of operating systems, including, but not limited to, UNIX, Linux®, Microsoft Windows XP®, and Macintosh OS 10®, may be substituted therefor without departing from the spirit or the scope of the invention. Alternative embodiments of computer system 600 can further include utilizing alternative display means in lieu of a monitor, including, without limitation, a CRT display, an LCD display, a projection display, or the like.

[0077] While the present invention has been described above in terms of an electronic embodiment wherein players use card tending devices to connect to a local caller, and bingo halls may be linked via telephone or other telecommunications lines, the present invention can also be implemented in a client-server computer architecture, as illustrated in Figure 8. In such an architecture, players connect to a gaming enterprise that operates a caller 510 on server 800 and communicates with players over communication network 805. Communications network 805 can include, but is not limited to, wireless and wireless communications means, such as those used to connect to the global computer network known as the Internet. In such an embodiment, players can maintain electronic bingo cards and communicate with caller 510 through clients 810-1 through 810-n. In such an embodiment, a computer system similar to computer system 600 may be used to implement server 800 and/or clients 810.

[0078] While the invention has been described in detail and with reference to specific embodiments thereof, it will be apparent to those skilled in the art that various changes and modifications can be made therein without departing from the spirit and scope thereof. Thus, it is intended that the present invention cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.